muscles of the hand, forearm or arm, and the fine and coarse movements of the hands could be executed in a perfect manner.

A tendency to ataxia, staggering towards the right side, developed.

The writer claims that motor aphasia and agraphia do not necessarily exist together, and, secondly, if both exist the lesion probably involves both the second and third left frontal convolutions in the right-handed. Third, motor agraphia depends on a lesion of the second left frontal gyrus.

CAMP (Philadelphia).

BRAIN SURGERY IN EPILEPSY AND CONGENITAL MENTAL DEFECT. William P. Spratling (N. Y. Med. Journ., Sept. 19, 1903).

Thirty-three cases of epilepsy of the head have been operated on at the Craig Colony, twenty of which were due to trauma of the head. The average duration of the epilepsy before the operation was approximately five years and a half. The results after one or more years showed in two cases no improvement of the disease, either temporary or permanent. In eight the attacks were lessened in frequency and severity, the operation being a part of the treatment only. In three the disease was much worse after the operation. Improvement, therefore, occurred in only 25 per cent. of the cases, and these were subject to the regular routine of medical treatment.

The author reports 194 cases from literature operated on for idiocy. Of 111 of these 19, or 17 per cent., died in consequence of the operation or soon after; 25, or 22.5 per cent., were operated on with no result; 10, or 9 per cent., were operated on with slight result; 24, or 21.5 per cent., were improved; 30, or 27 per cent., improved without reports as to their character.

In 83 more permanent cases, 24 per cent. died, 65 per cent. were unimproved, 10½ per cent. were improved, 74 out of 83 received no benefit. The writer holds that if the epilepsy is unessential, reflex, rudimentary in type, or of short duration, and the operation removes the cause early enough, we may expect the convusions to cease in many cases. Of congenital mental defect, not a single case is reported where a normal mental status was established through surgical intervention.

W. B. NOYES.

GROWTH AND HISTOGENESIS OF NERVES. Charles Russell Bardeen (Amer. Journ. of Anatomy, March 28, 1903).

In the development of the peripheral nervous system it is convenient to recognize several stages, although it is difficult to draw a sharp line of demarcation between them. The first stage is that of the differentiation of the motor nuclei and sensory ganglia; the second includes the period of outgrowth from the region of the central nervous system to various peripheral anlages: the third the development of the branches from the primary nerves, to the various parts differentiated from these anlages; and the fourth, the development of functional unity between the nerve fibers and the structures to which they are distributed. During the second period the proximal nerve-plexuses are formed, during the third the coarser peripheral plexuses, and during the fourth the finer terminal plexuses.

The axis-cylinder fibrils of the nerve grow out by continuous extension from central cells. They divide and branch extensively as they proceed from the region of the central nervous system outwards. They leave the central nervous system and spinal ganglia, in naked bundles, but soon become intimately related with sheath-cells which accompany them closely throughout the period of growth. At the growing tip of a nerve it is difficult to decide whether the axis-cylinder fibrils or the sheath cells proceed. Posterior to this the nerve gradually becomes distended with fibrils by ingrowth from behind, or by multiplication due to division.

In an early embryonic nerve of moderate size, one finds many hundred fibrils inclosed by a sheath of flattened cells, but with no cells among them. There is no segmentation in the axis-cylinder fibrils corresponding to the cells of the sheath of Schwann.

Union of nerve and muscle fibers takes place before the formation of the sarcolemma. The sheaths of the nerves serve to maintain the stroma in which the axis-cylinder fibrils grow. At first large numbers of fibrils are ensheathed within the main trunks of the nerves, but by proliferation of the sheath cells smaller and smaller bundles are inclosed until finally but a small group of fibrils is inclosed within each sheath of Schwann. Myelination is due to influences exerted by the axis-cylinder fibrils on the surrounding stroma.

BIRTH PALSIES. H. Bochroch (N. Y. Med. Journ., Sept. 19, 1903).

Lesions of the brain such as produce hemiplegias, microcephaly, porencephaly and hydrocephalies are produced by prolonged pressure at birth—frequently from delayed application of forceps, rather than use or abuse of forceps. They occur most frequently among first-born children.

It is probable that the lesion which causes this serious disease is originally one of hemorrhage due to laceration of the veins of the pia mater, just as they enter the longitudinal sinus, or hemorrhage from other sources. Extensive extravasation of blood occurs, usually widely distributed over the convexity of the hemispheres. In some of these cases the writer believes an opening might be made in the side of the head in the parietal region, and the effused blood washed out.

After months and years have elapsed the brain tissue becomes sclerosed; cysts and porencephaly become established, and neither medicine nor surgery can help. Erb's paralysis, or brachial palsy, which results from excessive traction or pressure upon the shoulder, involves as a rule the following muscles: the deltoid, the infraspinatus, the supraspinatus, the teres minor, the biceps, the brachialis anticus and the supinator.

In some cases the fingers and hand are involved. It is often termed the Erb-Duchenne form of palsy, and is characterized by the arm falling motionless to the side of the body; the arm turning inward and extended; flexion of the forearm and raising of the arm impossible, while movements of the hand and fingers are retained. NOYES.

A CONTRIBUTION TO THE SURGERY OF THE BRAIN. William Hudson (Am. Journ. of Med. Sciences, Sept., 1903).

The localization of cerebellar tumors is difficult, and tumors have been found at autopsy which have presented no symptoms in life, or symptoms referable to the other lobe, or symptoms due to hydrocephalus internus. In two cases reported by the writer, one showed positive localized tenderness on deep pressure over the tumor; paralysis of the external rectus muscle of the eye on the side of the tumor; paresis of the seventh nerve; pain in the back of the neck, on the same side. There was weakness on the left side and rotation in walking.

In case two there was positive localized tenderness on deep pressure, paralysis of the external rectus and seventh nerve on the same side as the tumor, but no change from the normal in either side of the patient in sensation, motion, or strength. There was absolute deafness on the tumor side.

There was also a decided rotation of the body from left to right. In both cases the knee jerks were totally absent until after the operation, when they became more lively than normal. This condition is variable in